TRAIL/TNFSF10 Protein, Human

Cat. No.:	HY-P7306
Synonyms:	rHuTRAIL/Apo2L; TNFSF10; CD253
Species:	Human
Source:	E. coli
Accession:	P50591 (V114-G281)
Gene ID:	8743
Molecular Weight:	Approximately 20 kDa

PROPERTIES

AA Sequence	VRERGPQRVA AHITGTRGRS NTLSSPNSKN EKALGRKINS WESSRSGHSF LSNLHLRNGE LVIHEKGFYY IYSQTYFRFQ EEIKENTKND KQMVQYIYKY TSYPDPILLM KSARNSCWSK DAEYGLYSIY QGGIFELKEN DRIFVSVTNE HLIDMDHEAS FFGAFLVG
Biological Activity	1.The ED$_{50}$ is <40 ng/mL as measured by RPMI-8226 cells, corresponding to a specific activity of >2.5 × 10^4 units/mg. 2.Measured in a cytotoxicity assay using L929 mouse fibroblast cells in the presence of the metabolic inhibitor actinomycin D. The ED$_{50}$ for this effect is 1.484 ng/mL, corresponding to a specific activity is 6.738×10^5 units/mg.
Appearance	Lyophilized powder
Formulation	Lyophilized after extensive dialysis against PBS or 50 mM Tris-HCL, 300 mM NaCl, pH 8.0.
Endotoxin Level	<0.2 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH$_2$O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	TRAIL Protein (TNFSF10), a member of the TNF superfamily, is a type II transmembrane protein. TRAIL Protein is expressed in various tissues, especially in the spleen, lung, and prostate. TRAIL protein is mainly expressed on surface of immune cells, such as cytotoxic T cells and natural killer (NK) cell. TRAIL proteins on NK and T cells is critical for controlling virus infections

and tumor immune surveillance[1][2].

Human TRAIL consists of cytoplasmic domain (M1-V17), helical domain (L18-F38), and extracellular domain (T39-G281). Human TRAIL Protein shares < 70% common aa identity with mouse and rat. Mouse TRAIL Protein shares 86.94% common aa identity with rat.

TRAIL Protein mainly interacts with two agonistic TRAIL receptors (TRAIL-R1 and TRAIL-R2) and induces apoptosis in tumor or infected cells. TRAIL Protein also binds with DR4, DR5, and OPG. When binding to DR4 or DR5, TRAIL Protein can recruit FADD and further recruit and activates caspase-8. Besides, TRAIL may also trigger nonapoptotic signaling through activating pro-inflammatory pathways, such as NF-κB, PI3K/Akt, and MAPK pathway[1][2].

TRAIL induces apoptosis of tumor cells in a p53 independent manner. TRAIL-based therapies has high anti-tumor potential [3].

REFERENCES

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